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PLANNING AND PLAN IMPLEMENTATION

OVERALL APPROACH TO SOLUTION OF PLANNING, INCENTIVE PROBLEMS URGED

Moscow PLANOVOYE KHOZYAYSTVO in Russian No 9, Sep 82 pp 3-15

[Article by A. Bachurin, deputy chairman of the USSR Gosplan: "Plan and Incentives"]

[Text] Ensuring correct interconnections between the plan and incentives is one of the urgent problems of improvement in the economic mechanism. In connection with this economists and economic planners are discussing the following question, which was also raised previously: For what is it better to provide economic and moral incentives--for plan fulfillment or for the actually attained result (increase in output, in gross income, in derived savings or in profit)? However, the conditions of development of productive forces have changed and the requirements for an improvement in the results of activity have risen considerably. It is necessary to increase the economic interest of labor collectives in improving the end results of activity, especially as many cases of understatement of plans by enterprises, as well as by ministries, for the sake of obtaining material and moral incentives, are observed in the national economy. Moreover, the proper distinction between the fulfillment of an understated and a stepped-up plan is not always made in the incentive system. The enterprises that have drawn up stepped-up plans often, when the results of their activity are reviewed, are in a worse situation than the enterprises that have overfulfilled less or not at all stepped-up planned assignments. At the November (1981) Plenum of the CPSU Central Committee L. I. Brezhnev noted that an economic situation in which it was economically unprofitable for enterprises and associations to undertake stepped-up plans was still encountered.

Industry and capital construction tolerate the understatement of plans of the first and second quarters. Considerable bonuses for the fulfillment and overfulfillment of these plans are paid regardless of the fact that assignments shifted to the second half-year and sometimes even to the fourth quarter are not fulfilled. Such a practice weakens state planning discipline, damps the enthusiasm of labor collectives in their fight for the fulfillment of the annual plan and leads to a failure to meet obligations connected with deliveries of products to consumers.

With due regard for the indicated circumstances the practice of payment of 50-percent purchase price markups for above-plan output has been changed in agriculture. Markups are now paid for an increase in output obtained as compared with the average annual volume of purchases during the past 5-year period. In this sector, where there are vast possibilities for the growth of the yield of agricultural crops and the productivity of animal husbandry, the new incentive principle is

fully justified and, undoubtedly, will lead to positive results. However, it has a certain shortcoming when the results of activity of advanced enterprises are evaluated. For example, in industrial sectors incentives for an increase in output, as well as for an increase in labor productivity or profit, place efficiently operating enterprises under less advantageous conditions as compared with inefficiently operating enterprises. At the same time, for a proportional development it is very important to economically induce both better and lagging enterprises to fulfill their plans.

In the accountability report to the 26th CPSU Congress L. I. Brezhnev stressed the following: "Under present conditions the importance of discipline, the importance of personal responsibility, rises many times... The first, which I would like to discuss, is responsibility for the fulfillment of state plans. The party has always considered the plan a law, not only because it is approved by the Supreme Soviet. The plan is a law, because only its observance ensures the harmonious operation of the national economy."¹

The fulfillment of the plan by all enterprises is the most important condition for a proportional and balanced development of the economy and for a reduction of losses and unproductive expenditures. Conversely, the nonfulfillment of five-year or annual plans gives rise to bottlenecks and disproportions, to irregularities in material and technical provision and to all kinds of additional expenditures and losses.

In the light of the above-stated it must be concluded that there can be no two contrary opinions in connection with the question as to whether the problem of intensification of the organizing and mobilizing role of the plan in the development of the national economy remains urgent today.

The increased scale of public production and the policy of economic intensification dictate the need for an improvement in the quality, scientific substantiation and balance of the plan. The increase in the number of sectors and enterprises requires an improvement in the coordination of their activity, its planning according to vertical and horizontal lines and a correct combination of centralized planning with the development of the independence and initiative of enterprises in the preparation and fulfillment of their plans. In connection with this there should be an economic incentive system, which, inducing labor collectives to fulfill plans, at the same time, intensifies their interests in uncovering intraeconomic potentials and in developing creative initiative in the attainment of the best end results.

However, there is also another opinion, which, in fact, sets off the plan against incentives for an actually obtained economic effect. A changeover from economic incentives for plan fulfillment to incentives for an actually obtained effect is proposed.² Such a point of view is based on the assumption that, when collectives are given incentives for the level of production efficiency, an end will be put to

1. "Materialy XXVI S'yezda KPSS" [Materials of the 26th CPSU Congress], Moscow, Politizdat, 1981, p 50.

2. P. Bunin, "Plan Level," PRAVDA, 11 March 1982.

equalization and derivation in wages. If the work of labor collectives is judged by the actually obtained income (gross income, or rather net profit), no plan corrections, which are often used, can strengthen the financial status of enterprises and improve the conditions for material incentives for workers. At the same time, when incentives are provided for the level of fulfillment of the plan, its correction is highly desirable. To eliminate the understatement of plans, a reorganization of the system of distribution of enterprise income is proposed. It is planned to make the level and growth of wages directly dependent on an increase in gross income or net profit. In the author's opinion, material incentives for the level of efficiency will induce enterprises to draw up stepped-up plans and to balance them better.

An all-around analysis of this position seems important, because the following question remains urgent: What should be done so that enterprises are interested and, in fact, draw up stepped-up plans? On the other hand, the problem of a direct coordination of wage funds and of the amount of wages of every worker with the end result actually attained by the labor collective is no less urgent. These complex problems have been discussed in the countries of the socialist camp in the last few years. They have been solved in one way or another within the framework of the economic mechanism functioning in every country. In all this work there are similar tendencies, but there are also differences, because there is no fixed pattern in the basic directions in the improvement in the economic mechanism as a whole and, especially, in its individual links in CEMA member countries. The specific conditions of every country, its economic structures and the conditions of development of productive forces and production relations must be taken into consideration.

When solving the indicated problems in our country, taking into consideration the vast scale of the diversified economy, it is necessary to proceed primarily from an analysis and study of Soviet experience in the area of planning and management, as well as of the objective needs of the national economy. At the same time, as L. I. Brezhnev pointed out at the 26th CPSU Congress, the experience of fraternal socialist countries must be utilized more attentively and broadly.

The basic directions in the improvement in planning and economic incentives defined by the decisions of the 24th, 25th and 26th CPSU Congresses proceed from the further development and concretization in conformity with modern requirements of the basic Leninist principles of socialist economic management. In their basis they remain a guide to action even today. Principles concerning the planned nature of socialist economic development, democratic centralism and a correct combination of its two elements in management and planning, enlistment of wide masses of workers in production management, cost accounting and economic and material incentives are implied.

The long-term experience in the management of the large-scale socialist economy in our country convincingly demonstrates that it is important to correctly combine centralized and democratic principles in management and planning--plan and cost accounting, plan and incentives. Enthusiasm for one of the aspects of the economic mechanism without regard for the interconnections of its various links and an overall approach to an improvement in the entire system of national economic management cannot produce the necessary results in an increase in the efficiency of public production. Moreover, it is inadmissible to set off individual links of the economic mechanism against each other.

At the same time, under present conditions it would be incorrect to underestimate the problem of the main link in the system of socialist economic management. For example, there is the opinion that a reorganization of the wage system is the main problem for an improvement in the quality of enterprise work under present conditions. It is assumed that, when the principle of remuneration according to labor with due regard for its end result is observed strictly, all economic problems will be solved successfully. With regard to wages there is no doubt that problems exist. Discipline in the utilization of wage funds has been lowered in a number of sectors in the last few years. Often an increase in wages does not conform to an improvement in the end results of activity and in individual sectors the growth of average wages outstrips the rise in labor productivity. As a result, economic interest in an improvement in the quality of work declines. In particular, the fact that progressive output norms have begun to be introduced more slowly points to this. Under such conditions the application of new forms of wages and incentives in combination with the advanced brigade method of labor organization is one of the key factors in labor productivity growth.

However, the switchover to wages according to the end result, as well as an increase in the efficiency of other forms of material and moral incentives, in turn, requires an improvement in planning and management. It is not only a question of an increase in the scientific substantiation and balance of plans, but also of the establishment of a more efficient mechanism of plan fulfillment.

Under the conditions of the increased intensification of all public production the plan, its assignments and incentives are to operate in the general main direction, that is, to maximally contribute to the growth of labor productivity and output-capital and to the saving of all production resources. Shortcomings in planning often cause bottlenecks and disproportions. Without overcoming them it is impossible to successfully and broadly introduce the procedure of wages according to the end result. For example, a lag in the industry of group B even under the conditions of a successful development of the industry of group A creates difficulties in an increase in wages at the enterprises that improve the indicators of their activity. Therefore, to increase the effectiveness of economic incentives, it is important to draw up balanced plans and to avoid bottlenecks and disproportions. Conversely, well-prepared plans may not be fulfilled if the economic interest of enterprise collectives in this matter declines.

Practical experience shows that economic incentives can contribute to the development of stepped-up plans, as well as hamper it. For example, the payment of increased bonuses for the overfulfillment of certain planned assignments lowers interest in the development of optimum plans mobilizing for an improvement in work. With due regard for this circumstance at one time the procedure of distribution of above-plan profit in industry and other sectors was changed and additional material incentives for labor collectives undertaking in the form of counterplans higher obligations as compared with the assignments of five-year plans were introduced.

Therefore, economic incentives should not be set off against the intensification of the mobilizing role of the plan in the utilization of intraeconomic potentials and in the development of the labor activity of workers' collectives and of undertaking and initiative in enterprise workers. It would be incorrect to proceed from

the fact that all plans are prepared "from the base," according to the dynamics of corresponding indicators. Such cases do not mobilize labor collectives for an increase in efficiency and often weaken the effectiveness of economic incentives. In these cases unfairness in the distribution of the bonus fund between efficiently and inefficiently operating enterprises is inevitable. As is well known, however, such a negative practice has been condemned by the decree on improvement in the economic mechanism envisaging a new approach to the organization of planning.

What is needed to intensify the organizing importance of plans and, at the same time, to increase their role in ensuring an effective mechanism of economic incentives based on true cost accounting, on a stable improvement in the indicators of efficiency and on an increase in wages to the extent of improvement in the end result of every labor collective?

First of all, it is necessary to more fully and systematically realize the adopted decisions on an improvement in planning. If the plan is drawn up in strict accordance with them, the effectiveness of the entire mechanism of economic incentives (cost accounting, prices, wages, bonuses and indicators and criteria of evaluation reflecting the end results of activity) also increases greatly. It is also necessary to implement further steps in the direction of a rise in the scientific level of long-term planning and provision of a more efficient combination of the centralized planning principle with the development of cost accounting initiative and independence of associations and enterprises.

Among the envisaged and realized measures to improve planning a special place is assigned to an increase in the role of the five-year plan in the planned and proportional development of the national economy and to an improvement in economic incentives at enterprises. Only on the basis of the five-year plan can the level of organization of economic activity--from the brigade and individual enterprise to economic relations on the scale of the entire national economic complex--be raised.

When the intensive path of development is adopted primarily, the importance of the long-term approach in the solution of major scientific-technical, economic and social problems rises. In particular, the studies of 170 programs on major long-term scientific-technical problems during the 11th Five-Year Plan attest to this. The multifaceted activity of every more or less big enterprise (in construction, in industry and in agriculture) can no longer be properly organized only on the basis of an annual plan. Hence the special importance of economic incentives for the fulfillment of the five-year plan in a running total.

On the basis of annual plans it is difficult to create an effective mechanism of economic incentives for an improvement in the indicators of efficiency and quality. In incentives for "increments," if they are compared with the past year's level or the attained base, there is also a great deal of lack of coordination. In this case an objective comparison of the actually attained results of efficiently and inefficiently operating enterprises becomes complicated. Advanced enterprises, which more fully utilize potentials at previous stages, often are in a less favorable situation than lagging enterprises. The latter often "improve" indicators during the planned year after a big gap during the previous period. In these cases the five-year plan prepared on the basis of engineering and economic calculations is a more objective measure of the real possibilities of every enterprise or sector.

Incentives for an improvement in the attained result as compared with the basic assignments of the five-year plan from the national economic point of view are of much greater importance than incentives for the actual effect as compared with the last year's base. With due regard for this circumstance the decree of the CPSU Central Committee and the USSR Council of Ministers dated 12 July 1979 "On Improving Planning and Strengthening the Influence of the Economic Mechanism on Increasing Production Efficiency and Work Quality" envisaged additional incentives for the indicators of counterplans exceeding the assignments of the five-year plan for the corresponding year of the five-year plan.

On the basis of intensification of the role of the five-year plan in the balanced development of the economy and in the establishment of stable intereconomic relations it seems possible to expand the independence and initiative of associations and enterprises in the elaboration of annual counterplans from below. This strengthens democratic principles in planning, which contribute to the manifestation of the initiative of labor collectives in uncovering intraeconomic potentials. As it seems to us, this principle is implemented quite systematically in Bulgaria. The new system of planning and incentives in the People's Republic of Bulgaria is based on an increase in the role of the five-year plan. The number of indicators of the five-year plan approved for enterprises from above has decreased. The assignments of the five-year plan are specified and refined in annual plans. At the same time, a new approach in the organization of counterplanning is realized. The 12th Congress of the Bulgarian Communist Party pointed out the need to ensure a more correct correlation between centralized planning and the planning activity of the enterprises themselves for the purpose of the further development of democracy. Proceeding from this aim, beginning from the 1982 plan, assignments for five basic indicators are established for economic organizations: basic types of products in physical terms sold for export based on cooperated deliveries and deliveries for the internal market; volume of net output; export-import balance; allocations for provision with basic types of raw material resources and for scarce machines and equipment; limits (or standards) of the manpower size.

On the basis of the presented indicators enterprises independently form and approve their counterplans. The latter are "open," as it were, and are refined by the enterprises themselves as additional reserves are found. Economic incentives for economic organizations and local bodies in the People's Republic of Bulgaria are coordinated not only with the fulfillment of state assignments, but also with the results of fulfillment of detailed counterplans developed and adopted by the enterprises themselves. The rise in the level of five-year state planning and the development of counterplanning from below ensure that attempts at an understatement of plans by enterprise collectives are overcome. The principle of distribution of gross income, in which the wage fund is earned by the labor collectives themselves and is not approved from above, is also to contribute to this. An improvement in the methods of financial regulation and distribution of income is of great importance for its practical realization. At the same time, the necessary proportions and balance in the economy must be observed in practice. Therefore, the new approach in the distribution of the gross income of economic organizations presupposes an improvement in centralized long-term planning and the introduction of economic incentives for stepped-up counterplans developed by enterprises and economic organizations. Consequently, Bulgaria's experience also indicates that a rise in the level of counterplanning is possible only on the basis of an improvement in long-term state planning. An underestimate of this circumstance may lead

to an unsubstantiated growth of the population's monetary income and to a violation of the most important economic proportion between the population's growing effective demand and the increase in the production of goods and services.

An increase in the role of the five-year plan in the organization of economic activity and in economic incentives for enterprise collectives is not a simple task. In our country it was set as long ago as the period of implementation of the economic reform of 1965, but it was not possible to solve it properly. The decree dated 12 July 1979 again set it in industry and capital construction and the decree dated 14 November 1980 of the CPSU Central Committee and the USSR Council of Ministers "On Improving Planning and Economic Incentives for the Production and Procurement of Agricultural Products," in agriculture. They also formulated the basic prerequisites for a practical transformation of the five-year plan into the basic form of planning: improvement in the standard base of planning; development of a system of material, labor and cost balances; formation of the necessary reserves; conclusion of 5-year contracts; introduction of direct stable economic relations; development of counterplanning on the basis of the assignments of the five-year plan; approval of stable annual limits of capital investments and so forth. Considerable work is done in this direction. However, it has not yet been possible to fully realize the indicated prerequisites during the 11th Five-Year Plan. The problem of a stable five-year plan for capital investments and of the elimination of the dissipation of resources over numerous projects has not been solved properly. Objective difficulties of an internal and external nature arose, complicating the balance of plans. During the first years the volumes of construction and installation work approved in the five-year plan had to be reduced, owing to the shortage of material resources and for the purpose of concentration of resources on start-up projects. However, it does not follow from this that the tasks of improvement in the balance of the five-year plan and of intensification of its role in the establishment of long-effect standards and in an increase in the effectiveness of economic incentives were premature and unrealistic. Some workers, who do not believe in the concept of the five-year plan, sometimes express such a view. However, under present conditions it is impossible to work efficiently, following primarily current or operative plans, and to find the way out of difficult situations in the economy in the adoption of numerous decrees or regulations. With such methods alone it is difficult to ensure a proportional and balanced development of the public sector vast in its scale and number of enterprises. There is a need for a scientifically substantiated strategy of economic and social development realized in practice on the basis of long-term and five-year plans. Such a strategy was developed at the 24th, 25th and 26th CPSU Congresses, whose directives are the basis for our five-year plans and are mandatory for fulfillment.

From an analysis of the practice of development of the 11th Five-Year Plan and the course of its fulfillment during the past period conclusions can be reached as to the directions in which work should be intensified and additional measures should be implemented so that the next five-year plan may be prepared on a higher-quality level and in full accordance with the new requirements in the area of national economic planning.

First, the five-year plan should be formed much earlier than has been done thus far. The existing practice of its approval on the expiration of the first year of the five-year plan cannot be considered efficient. The examination in directive bodies of the draft of the five-year plan, as well as its approval in accordance with the established procedure before the beginning of the five-year plan,

will make it possible to promptly expand at enterprises work on the preparation of counterplans from below and their approval by the enterprises themselves on the basis of a limited (as compared with the 11th Five-Year Plan) range of indicators, to promptly conclude economic contracts for 5 years and to establish stable direct relations with suppliers and consumers. Such an organization is dictated by the increased importance of intensive factors in economic growth, by the need for a comprehensive study of the problems of acceleration of scientific and technical progress and its effect on an improvement in the operation of existing enterprises and by the enhancement of the role of existing production capacities in an increase in the production of necessary products.

Second, before the beginning of work on the 12th Five-Year Plan it is advisable to prepare and examine additional measures ensuring an improvement in the organizational and economic prerequisites for a rise in the level of five-year planning directly in production associations (enterprises).

In accordance with the directives of the 26th CPSU Congress the problem of expansion of the independence and initiative of production associations in the organization of economic activity, including in the solution of problems connected with the technical improvement in production and effective utilization of productive capital and manpower, should be solved.

When the 11th Five-Year Plan was drawn up, as an analysis shows, too big a number of indicators for labor, finances and new equipment were presented and approved for ministries, associations and enterprises. At the same time, such an indicator as the volume of capital investments for the technical retooling and modernization of production, which is most important for enterprises, was not established. Ministries did not sufficiently study this problem with enterprises. They concentrated their main efforts on a substantiation of the volumes of new construction and reconstruction. As a result, the primary part of the capital of the development fund earmarked for the technical retooling of production was assigned by ministries for the financing of new construction.

An increase in the role of the five-year plan and its stability does not mandatorily presuppose the use of an excessive number of directive assignments approved from above. Life is dynamic and refinements and corrections will be inevitably introduced into five-year plans, for whose realization reserves must be envisaged.

The assignments of the five-year plan are to direct ministries and enterprises toward an increase in the production and deliveries of necessary high-quality products for the national economy and the population, rise in the efficiency of public production and improvement in its balance. Therefore, indicators characterizing rates of growth and proportions and the end results of economic activity should occupy the principal place among directive assignments. The problem of refining the list of approved and calculated indicators of the five-year plan, as well as of increasing the role of counterplans, which are the most important direction in the democratization of planning and the means of expanding the creative activity and economic initiative of labor collectives, should be discussed in detail in the very near future.

At previous stages, when five-year plans were drawn up, the role of production associations (enterprises) in horizontal planning, that is, in the coordination of the plans of enterprises in the part of production and deliveries to each other of a specific products list, was underestimated. Meanwhile, this is a much more complex problem of plan balance as compared with the development of material balances according to a consolidated products list. Under the conditions of the planned economy it can be solved only through an intensification of the role of the economic contract and direct stable economic relations between supplier enterprises and consumer enterprises and organizations. The activity of enterprises, which is hampered by the existing practice of a late preparation of five-year plans and by the existing procedure of elaboration of the plans for the distribution of products and conclusion of contracts, in the formation of the list plan for the production and improvement in the quality of articles should be increased greatly.

A prompt conclusion of economic contracts and the observance of mutual economic responsibility of the parties are the most important means of fulfillment of five-year and annual plans. However, this requirement is most of all violated in capital construction, where unplanned noncontract work continues to be practised and often the rule "perhaps we will do this" is followed. However, one cannot rely on "perhaps" in plan fulfillment.

The interests of suppliers and consumers clash during the conclusion of contracts. The latter influence the specific list of products, which should be produced, not mandatorily those that the supplier wants to deliver. In the interest of an increase in production efficiency it is also possible to have a choice of suppliers, not spontaneous, but organized by superior planning and economic bodies. The planning of the production and distribution of products in strict accordance with the order book is their most important obligation. There are many violations in this matter. Often consumers do not influence suppliers, but, conversely, the latter dictate their will to consumers. One must fight against such a practice more resolutely. As it seems to us, the bodies of the USSR Gosplan should primarily perform this function. Their main task lies in strictly controlling the correctness of conclusion and prompt fulfillment of contracts, in applying sanctions against careless suppliers and in maximally promoting the development of direct economic relations, not in fully replacing the consumer.

Production associations optimal in their scale, which have big opportunities for the study of the needs of the national economy and for the determination of the prospects for the development of production of corresponding items, as well as for an economic maneuver in the course of fulfillment of the five-year plan, can more successfully solve the problem of plan balance along the horizontal line and of a prompt conclusion of contracts. This enables them to develop direct economic relations, to conclude contracts for 5 years and, when necessary, to introduce the appropriate corrections in them.

We can have many more small enterprises than we have now, but they operate much better when they enter into appropriate associations as affiliates. This enables them to ensure a higher level of labor productivity and to lower expenditures per unit of output. Therefore, the further concentration and centralization of production in industry, agriculture and capital construction and improvement in previously established production and scientific production associations are of great importance for a rise in the level of long-term planning.

To ensure a systematic organization of production at enterprises and on the scale of the national economy and a balanced growth of production coordinated with needs (population's demand), it is very important that plans are not only drawn up better and more promptly, but are fulfilled more successfully, especially in terms of the indicators of efficiency and quality.

An analysis of the indicators of efficiency of public production, as well as of periodically occurring deficits and bottlenecks, confirms the need to intensify the effect of the economic mechanism on plan fulfillment. For these purposes it is necessary to more widely introduce scientific labor organization and to improve production management; to more fully utilize economic methods of management on the basis of the further development and application of cost accounting; to improve material and moral incentives for plan fulfillment and for an improvement in the indicators of the economic activity of enterprises; to develop and improve socialist competition, including in the form of counterplans.

A successful plan fulfillment cannot be expected without a proper labor organization and labor discipline. Meanwhile, in a number of areas of the national economy it needs to be improved seriously. The brigade method and its further improvement are to play an important role in this matter.

Considerable results in labor productivity growth and in the strengthening of labor discipline have already been attained in some sectors on the basis of the brigade method of organization of and incentives for labor. For example, there are good indicators of the production activity of the Volzhsk Motor Vehicle Plant, the Kaluga Turbine Plant, the Ural Heavy Machine Building Plant, the Minsk Tractor Plant and many other enterprises. This method gives especially perceptible results under the conditions of an overall management of production efficiency and work quality, to which the practical experience of enterprises in Dnepropetrovsk Oblast attests. The further development and improvement in the brigade method, including the establishment of overall cost accounting brigades, will make it possible to intensify not only the role of the organizational factor in plan fulfillment, but also the effectiveness of economic methods of management. In cost accounting brigades the wage system is improving considerably and economic interest in an efficient utilization of implements of labor and in the saving of raw materials, supplies and energy is increasing. A truly proprietary approach to the preservation and augmentation of socialist property is fostered in their members and plant, not only brigade, cost accounting is strengthened accordingly. This is precisely what V. I. Lenin discussed when substantiating the essence and importance of cost accounting under socialism.

In order that the brigade method may be successfully developed further in industry, agriculture and capital construction and not encounter all kinds of restrictions, it is necessary to strengthen cost accounting at production associations and enterprises and to increase the economic interest of labor collectives, including managers, in improving the end result of economic activity. The so-called unregulated brigade form of organization of and incentives for labor in agriculture, despite its advantage, has carved its way with great difficulty for many years. The weak interest of managers and specialists, who continue to receive wages for performed work, is the main reason for its slow introduction. In practice, material responsibility for the end result (with payment of advances for production work) was

placed only on brigade members. Owing to this the economic interests of individual workers of the same labor collective do not coincide and kinds of cracks weakening the fight for high harvests and for the productivity of animal husbandry appear in cost accounting.

In the interest of full cost accounting it is advisable that managers and specialists receive remuneration for labor according to the end result. The procedure of guaranteed salaries not connected with the end result gives rise to parasitic tendencies and weakens cost accounting and the fight for the fulfillment of indicators for an increase in production efficiency.

For the purpose of a more extensive introduction of advanced brigade organization of and incentives for labor it is necessary, through the perfection of planning and management, to improve the conditions for a smooth production activity and a reliable material and technical supply for production. On the other hand, on the basis of improvement in five-year planning and introduction of stable economic standards it is necessary to strengthen cost accounting in production associations (enterprises), intensifying the orientation of all production and scientific-technical subdivisions of enterprises toward high end results of economic activity.

In connection with this a number of specific problems requiring a scientific analysis and discussion arise. The first is connected with a more correct combination of the plan and cost accounting and intensification of the economic approach to the solution of economic problems. Some economists incorrectly identify developed cost accounting with a broad utilization of market relations and with an excessive rise in the role of profit and urge a limited utilization of commodity-money relationships and of the cost accounting rights of enterprises. However, we had no shortage of all kinds of limitations. In particular, this is indicated by the half-hearted attempts to strengthen cost accounting on the basis of the decree on the economic reform of 1965, which produced considerable economic results during the first years of its implementation.

With regard to profit and a reduction in production costs their role in the economic mechanism has been belittled to some extent during the last few years. Many enterprises, as well as entire sectors, have begun to increase production costs and to lower production profitability. This means that, in practice, cost accounting principles in their Leninist concept are not yet realized fully. It is not accidental that the press again raises the problems of strengthening cost accounting and intensifying the effect of prices, wages and bonuses on an increase in production efficiency. In practice, however, the specific measures in this direction envisaged in the adopted decrees are still realized unsystematically and timidly.

The great Leninist teaching urges us to more fully utilize the plan and cost accounting in the interest of socialism. Long-term practical experience also confirms that true cost accounting can be successfully applied only on the basis of long-term scientific economic planning. It is the most important lever of the planned economy and the means of plan fulfillment and of an economical utilization of production resources. Without strengthening cost accounting at production associations (enterprises) of industry, construction organizations, kolkhozes and sovkhozes it is impossible to intensify the economic approach to the solution of economic problems and to increase the economic interest of labor collectives in an improvement in the end results of production.

Thus, expanding the nationwide fight for a high efficiency of public production, it is necessary to increase the interaction of the plan and cost accounting so that they may "work" better and more harmoniously in the interest of a successful realization of the economic strategy developed by our party. Under present conditions this means that all the elements of cost accounting activity and economic levers and incentives, including the wage system, by means of the plan should be directed toward an improvement in the end results of production. The wage fund and its growth should be directly connected with an improvement in the quality of work of labor collectives and profit should be increased to the extent of reduction of production costs and rise in output in the assortment and quality necessary for consumers. Such a growth of profit is fully justified economically and socially and necessary for financing the growing expenditures of the state. It is necessary to intensify the fight in all the sectors of material production for a reduction in production costs and an increase in profitability for the purpose of ensuring expanded socialist reproduction and an increase in public consumption funds.

Thus, it is inadmissible to set off the plan and cost accounting, the plan and the utilization of commodity-money tools, against each other. The objective laws of development of the socialist economy at the present stage of its development necessitate, along with an improvement in planning, the strengthening of cost accounting in brigades, shops, enterprises and associations and the refinement of prices, wages and bonuses. This will contribute to an increase in production efficiency and to the development of economic initiative and democratic principles in national economic management.

However, the indicated global formulation of the problem is not yet sufficient if such specific problems of planning and utilization of economic levers as the introduction of advanced norms and standards, reorganization of wages according to the end result, improvement in the system of prices and distribution of the income of enterprises, increase in economic responsibility for the fulfillment of the plan and contractual obligations and so forth are not solved systematically and jointly.

For example, let us take the norms of output and of material expenditures. Progressive norms of labor and of the utilization of material resources are needed primarily for the cost accounting enterprises themselves for an improvement in remuneration according to labor and stimulation of efficiency in the expenditures of raw materials, supplies and fuel at individual production sections. Therefore, they must constantly be in the center of attention of sectorial ministries. In practice, norms often are not revised for a long time, despite changes in technology and the introduction of advanced, new equipment. Moreover, some enterprises follow the path of understatement of output norms in order to bring up the average wages of workers and ministries react to such cases weakly or not at all and disregard the fact that they weaken the fight of labor collectives for an improvement in the end results of economic activity. Introduction of proper order at enterprises in the standardization of labor and of material resources is an urgent task in the matter of improvement in planning and economic incentives.

In our opinion, the positive experience of the GDR in economic incentives for a revision of output norms deserves attention. Its essence lies in the fact that, when norms are overfulfilled more than 105 percent, rates are lowered and a big overfulfillment of output norms becomes disadvantageous. Knowing this, workers

themselves make suggestions for the introduction of advanced norms. Such a measure, along with additional incentives for the introduction of progressive norms envisaged by the decree on improvement in the economic mechanism, undoubtedly, will contribute to an improvement in labor standardization at enterprises and, therefore, in the quality of the production plan.

Such a progressive measure as the extensive application as of 1982 of the standard planning of the wage fund also has a direct effect on the stimulation of an improvement in the end economic result of economic activity. It is to contribute to the adoption of stepped-up planned assignments. Another procedure of distribution of gross income, in which the wage fund is created in the form of "residual income," is possible as its alternative. However, the practical realization of this procedure is much more complicated and requires a number of organizational and economic prerequisites.

With rare exceptions wage standards should be stable and be established according to an indicator correctly reflecting the change in the labor efforts of production collectives. However, if an extensive application of standard net (conventional-net) output, which is more acceptable for the planning of the wage fund than gross or net output in current prices, is possible as such an indicator, a strict observance of the stability of a wage standard per ruble of output is more complicated. The necessary stability is often disrupted by ministries, which do not carry out proper work (as, for example, this is done in the Ministry of Chemical and Petroleum Machine Building) on improving the standard planning of wages. As a result, economic interest in a reduction in the number of workers and in labor productivity growth is weakened. Meanwhile, only when the stability of standards is observed does such a procedure of the planning of wage funds contribute to the development of stepped-up plans and to an extensive application of the Shchekino method. Using this as an example, it is not difficult to see how important it is to utilize the planning indicator and cost accounting economic interest in a coordinated way for an increase in the efficiency and productivity of labor.

Attaching proper importance to the strengthening of the effect of economic methods and incentives on production, the key role of the plan in the economic mechanism must not be underestimated. It distinctly appears in all our affairs, whether they are of a local or a national economic nature. Let us take, for example, the expansion of the output of highly efficient, new types of equipment and machinery. The existing system of wholesale price markups and the procedure of award of bonuses with all their importance do not resolve matters if plans do not give priority to efficient, new articles, do not meet the requirements of state standards and do not ensure high-quality standards during the designing and development of new equipment. Everyone is familiar with cases when yesterday's equipment begins to be introduced under the guise of "new" equipment. This means that in this fundamental problem of technical progress it is also necessary to intensify the interaction of the plan and incentives and to more actively utilize them for the purpose of output of highly efficient, new types of machinery and equipment surpassing (not corresponding--such are now very few; to be exact, surpassing) in their technical and quality parameters the highest foreign and domestic achievements and competitive on the world market. At the same time, the role of the plan in the removal of obsolete equipment from production should be increased. Such

assignments began to be envisaged in the plan as of 1982. However, this useful undertaking should be soundly combined with effective economic sanctions and those that do not fulfill state assignments for the replacement of obsolete articles should be punished strictly.

Practical experience in the introduction of new principles in the area of planning and economic incentives points out the need for an overall approach to an improvement in all the links of the economic mechanism. This is precisely how the problem was raised at the 26th party congress and at subsequent plenums of the CPSU Central Committee. A steadfast observance of this requirement will make it possible to attain significant results in an increase in the efficiency of public production and will contribute to a successful fulfillment of the 11th Five-Year Plan.

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REGIONAL DEVELOPMENT

UNION REPUBLIC STATISTICAL OFFICIALS QUANTIFY PROGRESS

Progress in Uzbekistan

Moscow VESTNIK STATISTIKI in Russian No 9, Sep 82 pp 3-11

[Article by S. Makhmudov, chief of the Uzbek Central Statistical Administration: "Soviet Uzbekistan"]

[Text] The great socioeconomic, political and cultural changes which have occurred during the years of Soviet power are starkly apparent in the example of Central Asia where the inspired Leninist prediction of the possibility of moving the previously backward peoples from feudalism to socialism has been fully confirmed. Prerevolutionary Uzbekistan was an agrarian raw material region for the Tsarist Empire with a poorly developed, chiefly processing industry. Its basic sector was cotton ginning, or the production of cotton fiber to be sent as a raw material to the textile enterprises located in the central regions of Russia.

The basic portion of the population in prerevolutionary Uzbekistan was engaged in agriculture. The emirs, khans, beks, beys, mullahs and imams endeavored to hold the working people in a state of extreme oppression and slave-like obedience, they doped the people with religion and developed fanaticism. This was an area of patriarchal relationships with an impoverished peasant economy, an illiterate population and complete disenfranchisement of the working people.

The 60-year history of the USSR for Soviet Uzbekistan has been a period of creative labor of a liberated people who are building a new state, a new life and who constantly feel the unceasing concern of the party and government and the infinite and selfless aid of all the fraternal Soviet peoples and, primarily, the Russian people.

Having voluntarily become part of the USSR, the Uzbek SSR¹, an equal among the equal 15 Union republics, gained enormous opportunities to successfully develop its economy and culture. Over the years of socialist construction, Uzbekistan has been turned into a republic with a multisector, technically equipped

¹ The Uzbek SSR was formed on 27 October 1924 from parts of the Turkestan ASSR and the Bukhara and Khorezma people's Soviet republics as a result of the national state demarcation of Central Asia.

industry, with large-scale, highly mechanized agricultural production, advanced science and culture.

For the great accomplishments by the republic's workers in economic, socio-political and cultural development as well as for achievements in strengthening friendship and fraternal cooperation among the socialist nations and nationalities, the Uzbek SSR has been awarded three Orders of Lenin, the Order of the October Revolution and the Order of Friendship of Peoples.

Industrialization became a major element in the socialist transformations in Uzbekistan. During the years of the prewar five-year plans, the republic started rapid industrial construction. With the aid of the peoples from the other fraternal Soviet republics, during that period Uzbekistan built more than 500 new industrial enterprises. During the years of the Great Patriotic War, on the basis of the enterprises evacuated to the republic as well as newly built ones, another 280 new industrial enterprises went into operation and these provided for the creation of new industrial sectors. During the period of the postwar five-year plans, on the basis of tapping the natural resources with which the Uzbek land is so generously endowed, new industrial centers and enterprises were created. The industrial appearance of the republic changed with every passing year.

Uzbek industry represents a diversified economy with over 1,600 enterprises equipped with highly productive equipment. In terms of the output of total industrial product, the republic holds fifth place in the nation while just 60 years ago, its industry was of a one-sided nature and was restricted to the primary processing of raw materials, chiefly raw cotton. Being the basic producer of cotton, Uzbekistan at the same time did not have a single textile mill and the peasant was forced to overpay for the expensive imported cotton fabrics.

During the years of Soviet power, along with the development of light and food industries, such completely new sectors of industrial production were created as metallurgical, chemical, large machine building and these have assumed ever-greater significance in the republic economy.

In 1981, the total volume of industrial production had increased, in comparison with 1922, by 414-fold and, in comparison with 1940, by 17-fold. Over the Tenth Five-Year Plan alone, the production volume rose by 27 percent. Machine building and metalworking have developed at more rapid rates as have the chemical, petrochemical and food industries.

The creation of the unified Central Asian power system has become a symbol of the friendship of Soviet peoples. This system includes over 100 thermal and hydropower plants located on the territory of the Central Asian republics and Kazakhstan. Electricity has penetrated all sectors of the republic economy and the most distant regions and has become a permanent part of the everyday life of the population. At present, Uzbekistan, in just 1981, produced 17-fold more electric power than in 1913 in Tsarist Russia. The development of electric power has turned Uzbekistan into a region which has outstripped many capitalist nations in terms of the per capita production of electric power.

The republic has created a fuel industry which is of national significance. The discovery of major deposits of natural gas has made it possible to sharply increase the share of this most progressive and cheapest fuel in the resources of the republic's fuel and energy balance.

Uzbek nonferrous metallurgy holds an important place in the Soviet national economy.

Uzbekistan in the 1940's did not have a chemical industry. In 1940, a total of around 2,000 tons of mineral fertilizers (in standard units) was produced while in 1981 the figure was already 6.8 million tons. The pioneer in the chemical industry--the Chirchik Electrochemical Combine (presently the Chirchik Elektrokhimprom [Electrochemical Industry] Production Association)--was built in the prewar period. At present, the chemical industry is represented, in addition to it, by the following production associations: Navoiyazot [Navoi Nitrogen], Uzbekkhimplast [Uzbek Chemical Plastics], the Fergana Nitrogen Production Association as well as the Almalyk, Namangan and Samarkand chemical plants, the Fergana Chemical Fiber Plant, the Kokand Superphosphate Plant, the Navoi Electrochemical Plant, the Tashkent Paint and Lacquer Plant, the Almalyk Household Chemicals Plant and by other enterprises producing mineral fertilizers, plant protection chemicals, chemical fibers and filaments, plastics and synthetic resins and domestic chemical products.

Machine building is one of the leading industrial sectors. A region in which prior to the revolution even the production of a hoe represented a problem, during the years of Soviet power became the basic, and for certain types, the sole producer and supplier, for example, of a range of machines for cotton raising, starting from the drill to harvesting units. The republic produces tractors for cotton raising, highly productive machines for the textile industry, equipment for the chemical industry, various types of electrical engineering equipment and materials, road and construction machinery as well as other machines and equipment which are needed not only by the Uzbek economy, but also in the other fraternal republics of the nation.

The high development level of machine building has made it possible for the republic to produce machine building products for export to many countries of the nation, including the major capitalist ones. Thus, machines produced in Uzbekistan are exported to European, American, Asian and African nations.

The enormous scale of construction has necessitated the creation of a building materials industry. At present, Uzbekistan has developed the production of cement, prefabricated reinforced concrete, wall materials, asbestos cement sheet and pipe, linoleum, window glass and many other types of building materials.

Prior to the revolution, in Uzbekistan, a region of cotton and silk, there was not a single enterprise producing cotton and silk textiles, and in a nation of vineyards and orchards there was no canning industry. The raw materials were shipped out of here at cheap prices and factory-produced products such as textiles, footwear and other essential goods for the public were brought in at increased prices. Over the years of Soviet power, the republic has developed a diversified light and food industry represented by numerous textile combines,

by garment, knitwear and footwear mills, by furniture industry enterprises, and by meat, dairy, bakery, candy, canning and many other enterprises.

The products of Uzbek industry have come to hold an honorable place in the total advance of Soviet industrial production. The republic holds first place in the USSR in terms of the production of machinery for cotton growing, cotton gins and roving frames, cotton fiber and raw silk, second place in terms of the production of spinning machines, third place for the production of vegetable oil and fourth place for gas production, the production of cotton and silk textiles and canned goods.

Industrial development has naturally caused the rapid growth of towns and urban type settlements. The republic's capital, Tashkent, and the other cities such as Samarkand, Gergana, Andizhan and Bukhara have been turned into large industrial and cultural centers. New towns have arisen, including: Chirchik (a town of energy and chemical workers), Angren (a center of the coal industry and building materials industry), Almalyk (a center of nonferrous metallurgy and the chemical industry), Bekabad (a town of metallurgical workers), Navoi (a power and chemical center), Zeravshan, Mubarek and many others. As a total over the years of Soviet power, 97 towns and cities have been formed in Uzbekistan.

Agriculture has changed beyond recognition. The republic's workers, under the leadership of the Communist Party, have successfully implemented Lenin's plan for the collectivization of agriculture. As a result of this, instead of the tens of thousands of small peasant farms employing the most primitive implements of labor, large socialist collective farms equipped with highly productive equipment were organized.

The production of gross agricultural product has increased significantly and the volume of this in 1981 increased by 8.3-fold in comparison with the pre-revolutionary period. The fields of Soviet Uzbekistan presently employ over 160,000 tractors, around 38,000 cotton harvesting machines and much other first-rate agricultural equipment.

One of the basic factors in strengthening the physical plant of agriculture has been the constant growth of capital investments going into the development of this major economic sector.

A significant portion of the capital investments (40 percent) going into agriculture has been used for water management construction which is of important significance in developing republic agriculture.

Over the centuries, the Uzbek people have dreamed about water. They erected levees and built dams for irrigating the fields and orchards and put up simple water-lift works. However, in the prerevolutionary period, little was done for irrigation.

Only in the Soviet period was the question of irrigation put on a scientific basis. Even in 1918, V. I. Lenin signed a decree on allocating 50 million rubles for carrying out irrigation work in Turkestan and for organizing this

work. This document marked the beginning to carrying out the intense development of irrigated farming in Uzbekistan.

Starting in 1939, the republic began a universal campaign for water. Upon the initiative of the Fergana kolkhoz members, a start was made to the people's irrigation projects the best example of which was the building of the Large Fergana Canal in a record-short time. During that same period, the Northern Fergana and Tashkent irrigation canals and the Kattakurgan Reservoir were built. Even in the period of the Great Patriotic War, water management construction did not stop.

In the postwar period, work to develop irrigated farming was carried out at an even higher pace.

The volume of capital investments by the state and kolkhozes into water management construction is shown in the following figures:

(in comparable prices, million rubles)

Years	Year Average	Years	Year Average
1946-1950	31.2	1966-1970	356.0
1951-1955	38.0	1971-1975	689.2
1956-1960	80.2	1976-1980	903.6
1961-1965	190.2		

The annually increasing volume of capital investments into water management construction in the republic has made it possible to carry out a broad range of projects for fully developing the lands of the Central Fergana, the Golodnaya [Hunger], Karsha, Surkhan-Sherabad and Dzhizak steppes. The one-time arid, lifeless steppes have been covered by canals.

The development of the arid lands has been possible due to a changeover to industrial construction methods. The hoe and mattock have been replaced by excavators, bulldozers, scrapers and other modern earthmoving equipment. As a result of the grandiose program of water control construction, the area of irrigated lands over the years of Soviet power has increased up to 3.6 million hectares with a sharp rise in their water supply. The republic has been turned into an unique area of irrigated farming possessing modern irrigation and reclamation works.

Uzbekistan is the basic cotton source of the USSR and one of the world's major cotton producers. In terms of the volume of its production recalculated in terms of fiber, it holds second place after the United States and provides the nation with as much cotton as is produced by such major cotton planting nations as Brazil, Egypt and Pakistan taken together.

Cotton raising most completely and harmoniously combines the interests and skills of the population with the needs of the national economy and ensures a steady rise in the well being of the republic's agricultural workers.

In the prerevolutionary period, the maximum amount of raw cotton, some 831,000 tons, was harvested in 1915. The beginning of the development of cotton growing in Soviet Uzbekistan goes back to the years of the First Five-Year Plan and since then the volume of raw cotton purchases has been steadily growing. As an annual average during the Eighth Five-Year Plan it was 4.0 million tons and 4.9 million tons in the Ninth. Great advances in the development of cotton growing were achieved over the years of the Tenth Five-Year Plan. The average annual volume of raw cotton purchases during this period was 5.7 million tons. In 1980 and 1981, the Uzbek kolkhozes and sovkhoses harvested 6 and more million tons of this valuable raw material.

Uzbekistan presently provides over 62 percent of the national volume of raw cotton purchases. Cotton is the pride of the Uzbek people. From it are produced thread, natural and artificial textiles, drive belts, kersey for boots, cotton wool, oil, glycerine, still and movie film and so forth.

Along with broadening the planted area, the cotton yield has also risen significantly. In terms of this indicator, Uzbekistan has long outstripped the major cotton-planting nations of the world. While in 1913, Uzbekistan harvested an average of 12 quintals of raw cotton per hectare, in 1981 the figure was over 32 quintals and many farms harvested higher crops. Thus, in 1981, 55 kolkhozes and 7 sovkhoses harvested an average of over 45 quintals per hectare, while 20 kolkhozes and sovkhoses had over 50 quintals of raw cotton.

The Uzbek land is famous not only for its cotton. At present, the republic is the sole producer of ambar in the nation, it is responsible for 62 percent of the silkworm cocoons, 35 percent of the Astrakhan wool and 21 percent of the rice produced in our nation. Also of national importance is the production of fruits, grapes and melon crops.

The significant rise in agricultural production, the creation of large highly-mechanized farms and the introduction of advanced farming methods have required the training of numerous agricultural specialists and equipment operators. Each farm now employs specialists with a higher and specialized secondary education including various types of agronomists, veterinarianians and zoo-technicians, engineers, technicians and economists.

Remarkable workers have grown up on the kolkhozes and sovkhoses themselves. Tens of thousands of pacesetters in the republic's agriculture have been awarded orders and medals of the USSR, medals of the USSR Exhibit of National Economic Achievements, and have received the honorary titles of winners of the Lenin and State Prizes. Many of them are Heroes of Socialist Labor.

The development of the sectors in the Uzbek economy has been supported by modern means of transport. Railroad construction started in Uzbekistan at the end of the last century. However, up to the revolution many regions of the republic were bypassed by the rail lines and cart and pack animal were the basic type of transport. Transport began to develop really only in the years of Soviet power. The republic built new railroad lines and spurs, highways and established numerous air routes. All the towns and rayon centers are connected by highways and have bus service.

The freight turnover of rail and motor vehicle transport in 1981 had risen by almost 25-fold in comparison with 1940 while passenger turnover of rail, motor vehicle and air transport has risen by almost 13-fold.

With the development of natural gas output in the republic, large-diameter gasline transport was developed and this provides uninterrupted gas supply for the industrial enterprises as well as the municipal economy and population of many towns and rayons in the republic. Uzbek gas is also piped to the Urals, to the central industrial regions of the nation, to Kazakhstan, Kirghizia and Tajikistan.

A great construction program has been carried out. Starting from the first years of the formation of the Soviet state, Uzbekistan has been and is being given money and other material means for capital construction in ever-increasing amounts. Over the period from 1924 through 1981, capital investments amounted to 80.4 billion rubles. Over the last two five-year plans alone (1971-1980), capital investments were 43.4 billion rubles while over the entire previous period (1924-1970), 31 billion rubles were invested.

In Uzbekistan, as throughout the nation, housing construction is being carried out on an unprecedented scale. The scale of this can be judged from the fact that over the years of the Tenth Five-Year Plan alone, housing has been built and put into operation with a total (usable) area of 27.4 million m². This is almost 3-fold more than over the entire prewar period.

The socioeconomic conditions of the workers' life have also changed fundamentally. Year after year, there has been an increase in the volume of national income which is the basis for improving the material prosperity of the workers. In 1960-1981 alone, national income in the republic rose by 3.8-fold. Increased prosperity has been provided by higher wages for the workers and employees, higher income for the kolkhoz members as well as by increased amounts of pensions and assistance. The public consumption funds have assumed ever-greater significance in improving the material prosperity of the workers. The average monthly earnings of manual and white collar workers employed in the republic economy in 1981 reached 159 rubles, and considering the payments and benefits from the public consumption funds, almost 228 rubles. Here the total payments and gratis services from the public consumption funds had increased in 1981 by 7-fold in comparison with 1960.

One of the most important economic indicators reflecting the increased material prosperity is the purchasing power of the public. The total volume of retail commodity turnover in state and cooperative trade, including public dining, in 1981 was 11.3 billion rubles. Some 16-fold more commodities were sold to the republic population than in 1940.

As a result of consistently carrying out Lenin's nationality policy in Uzbekistan, a true cultural revolution has been carried out. This has turned the backward, illiterate and remote borderland of Tsarist Russia into one of the major centers of national cultural life.

One specialized secondary school and 165 primary schools which instructed the children of the Tsarist officials and the wealthy--this was all that was done

for public education in the prerevolutionary period. It is not surprising that under these conditions more than 96 percent of the population of an age of 9-49 years was illiterate. As a result of carrying out measures to eliminate illiteracy, by 1939 the proportional amount of the illiterate population had declined to 21.3 percent, and by 1959, illiteracy had virtually been eliminated in the republic.

At present, Uzbekistan is a region of complete literacy. One out of very third inhabitant of the republic is studying. The 9,500 general education schools are teaching over 4 million students.

One of the most important social achievements in Uzbekistan, as was pointed out by L. I. Brezhnev at a ceremony devoted to the presentation of the Order of Lenin to Uzbekistan, is "...the significant increase in the size of the working class. It is now a majority of the republic population. The growth rate of the working class in your republic in the 1970's was almost 3-fold higher than for the nation as a whole." In the 11th Five-Year Plan the republic intends to organize around 200 vocational-technical schools and train 700,000 skilled workers.

Great attention is being given to the training of specialists with a higher and specialized secondary education. Lenin's decree on the creation of a state university in Tashkent marked the beginning to the development of higher and specialized secondary education in the republic. While prior to the revolution there was not a single institution of higher learning, at present the republic has 43 higher and 227 specialized secondary institutions of learning training 285,000 students in the higher institutions and 244,000 in the secondary ones.

A remarkable achievement in the development of public education has been that representatives of over 70 nationalities and peoples of the USSR are studying in Uzbek schools. One can judge just how great the importance is of the successes achieved in the area of education from the fact that while on 1 January 1941 the republic economy employed around 55,000 specialists with a higher and specialized secondary education, over the years of the Tenth Five-Year Plan alone, the higher and specialized secondary schools have trained around 500,000 specialists. To this, we must add that the schools train the youth in more than 400 specialties. In terms of the number of students per 10,000 persons of the population, the republic has left far behind such developed capitalist nations as England, France, the FRG, Italy, Canada and Japan.

Much work has been done to create a broad network of scientific research institutions and to train scientific personnel. In a land which at one time did not know the word "scientist," at present there is an academy of sciences as well as scores of scientific institutions which fruitfully employ 36,500 scientific workers. Among those employed in social production there is a greater percentage of specialists with a higher and specialized secondary education.

Mass cultural and educational work has been widely developed. Available to the public are 35 museums, more than 4,000 club institutions, over 5,000 projector and screen installations, 7,000 mass libraries with holdings of more than 64 million copies.

Publishing has also developed widely. Prior to the revolution 33 books had been published in Uzbek. At present, each year more than 2,000 titles are published with a total run of 39 million copies, of which over one-half of the run is in Uzbek.

In 1913, a total of 14 newspapers were published on Uzbek territory. At present, newspapers are published both in Russian and in the languages of the indigenous nationalities. In 1981, 281 newspapers were being published with a single run of 5 million copies and here over one-half was in Uzbek.

In the area of literature and art, the achievements of the republic have been immeasurable. Over the years of Soviet power, there have arisen numerous poets and prose writers, artists and musicians, painters and sculptors the works of which--national in form and socialist in content--are a vivid proof of the true flourishing of Uzbek culture.

One of the greatest victories of the Great October Socialist Revolution was free medical services for the population. In the prerevolutionary period on the entire territory of Uzbekistan there were just 63 hospital institutions and 139 physicians served over 4 million persons. All of this as well as the terrible poverty of a predominant portion of the native population were the reason for the mass spread of illnesses as well as the high mortality rate. Over the years of Soviet power an extensive network of medical institutions has been created and numerous medical workers have been trained.

The number of beds in hospital institutions in 1981 reached 191,000. More than 49,000 physicians of all specialties and 140,000 middle-level medical personnel each day are engaged in therapeutic and preventive services for the public. In terms of the number of physicians available, Uzbekistan has outstripped such developed capitalist nations as the United States, England, France, Italy, the FRG and others.

The growth of the material and cultural standard of living of the people and the carrying out of the necessary measures to protect the health of the workers have led to a decline in the mortality rate and to the growth rate of the birth rate in the population the size of which over the years of Soviet power has risen by more than 12 million persons. Over this period, the urban population has increased by almost 6 million persons and its share in the total size of the republic's population has risen from 24 percent in 1913 to 42 percent by the start of 1982.

Significant prospects have opened up for the Soviet people in the 11th Five-Year Plan. The Communist Party has advanced as the main task of the five-year plan a further rise in the prosperity of the Soviet people. This prospect encourages the workers to attain new successes in the development of production and in increasing its efficiency.

Over the 5 years the national income in the republic is to rise by 4.2 billion rubles or by 26.1 percent. The volume of industrial production in 1985, in comparison with 1980, will increase by 30 percent. Here the gas industry, ferrous metallurgy, the chemical and petrochemical industry, machine building

and light industry will develop at a more rapid rate. The production of consumer goods will increase by 36.4 percent. The production of consumer goods will involve enterprises which previously did not produce these.

Equally grandiose tasks confront the agricultural workers in the new five-year plan. The average annual volume of gross product will increase by 17 percent. As before, Uzbekistan will be the basic cotton source of the nation and the average annual production (purchases) of raw cotton for the republic are planned at 5.9 million tons. Along with the development of cotton raising, high production rates have also been set in the other sectors of agriculture.

In accord with the decisions of the May (1982) Plenum of the CPSU Central Committee, in the 11th Five-Year Plan the average annual production of grain should be 2.8-3 million tons, in the 12th it will be 3.3-3.5 million tons while for meat (dressed) the figures are, respectively, 400,000-410,000 tons and 540,000-560,000 tons. Over the 10 years (up to 1990), at least 900,000 hectares of irrigated land should be put into operation and 2.6 million hectares of pastures provided with water.

The physical plant of agriculture will continue to be further strengthened. For this purpose, the republic kolkhozes and sovkhoses during the current 5 years will receive 79,000 tractors, over 36,000 trucks, more than 4,000 grain harvesting combines and much other equipment.

In the 11th Five-Year Plan a vast program of capital construction is to be carried out. One of the main areas of construction will be the reconstruction and technical reequipping of operating enterprises. This will make it possible to increase product output in a short period of time and with the least expenditures. The total volume of capital investments in 1981-1985 will be over 28 billion rubles and this is 18 percent more than during the years of the Tenth Five-Year Plan.

The high economic growth rates and the increased production efficiency create a dependable basis for carrying out the program of social development and for increasing the prosperity of the people. Real per capita income over the 5 years will rise by 17.7 percent.

As before, particular attention is to be given to housing construction. Considering all financing sources, over 30.3 million m² of housing will be completed and this is 14 percent more than in the previous five-year plan.

There will also be further development of central gas supply for housing, sewage and telephone systems, work on public amenities and landscaping of the republic's towns and villages. Education, culture and public health will rise to new heights and their physical plant will be strengthened.

The outlined program for the further development of Uzbekistan is steadily being carried out as is affirmed by the results of the first year of the five-year plan. For the achieving of high results in the All-Union Socialist Competition and for successfully carrying out the 1981 State Economic and Social Development Plan, Uzbekistan for the ninth time running has received the challenge Red Banner of the CPSU Central Committee, the USSR Council of Ministers, the AUGCTU and the Komsomol Central Committee.

In actively participating in the socialist competition to commemorate the 60th anniversary of the formation of the USSR, the Uzbek workers are successfully carrying out the decisions of the 26th CPSU Congress and the 20th Congress of the Uzbek Communist Party.

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Accomplishments of Georgia

Moscow VESTNIK STATISTIKI in Russian No 9, Sep 82 pp 12-17

[Article by R. Basariya, chief of the Georgian Central Statistical Administration: "Inspired by Friendship"]

[Text] On 25 February 1921, the workers of Georgia, with the aid of the Red Army, overthrew the power of the landowners and capitalists and proclaimed Soviet power. On 12 March 1922, Georgia became part of the Transcaucasian Federation and as part of the Federation was incorporated in the USSR on 30 December 1922.

Over the years of the prewar five-year plans, the Georgian SSR was turned into an industrial-agrarian republic with an advanced socialist culture.

The workers of Soviet Georgia, with the aid of the fraternal peoples, have realized Lenin's plan for the construction of socialism with this plan encompassing all the basic spheres of life. The standard of living of the people has risen constantly and there has been the clear flourishing of the many-sided culture which is national in form and socialist in content.

The republic now possesses a modern diversified industry. In 1981, the volume of industrial product had increased by 292-fold in comparison with 1922 while gross agricultural product had risen by 13.3-fold. The average annual number of employees in the republic economy had risen from 87,000 persons to 2,034,000 persons.

Over the years of Soviet power, over 1,200 large industrial enterprises have been built in the republic. Power has developed rapidly. In 1927, the nation's second (after the Volkhov) Zemo-Avchal'skaya GES imeni V. I. Lenin was built under Lenin's GOELRO [State Commission for the Electrification of Russia] Plan. Recently, Georgia built a most unique structure, the Ingus GES, the largest in Transcaucasia. In 1981, the republic produced over 15 billion kilowatt hours of electric power which is 20.3-fold more than the 1940 level. In one day 2-fold more power is generated than in all of 1913. The Georgian power plants are part of the unified Transcaucasian Power System and this in turn is connected to the USSR Unified Power System.

The fuel industry created over the years of the five-year plans has developed rapidly. In it an important place is assigned to coal mining and to the oil refining sector which is new for the republic.

New capacity has been completed at the Chiatur Manganese Ore Deposit. In 1981, the republic provided the nation with 2.7 million tons of this valuable raw material. In comparison with 1940, the production of nonferrous metallurgical products has risen by almost 14-fold. The republic is proud of the pioneers of ferrous metallurgy in Georgia: the Zestafoni Ferroalloy Plant and the Rustavi Metallurgical Plant. A group of metallurgical workers has been awarded the Lenin Prize for introducing the unique method in metallurgical practice of continuous steel casting and for fully mechanizing the "400" pipe rolling mill.

During the years of Soviet power, the republic has organized machine tool building, instrument building, motor vehicle building, electric locomotive building, shipbuilding, aviation building, agricultural machine building as well as the production of technical equipment for the food and ore-mining industries. Along with the cities of Tbilisi, Sukhumi, Batumi and Tskhinvali, Kutaisi, Rustavi, Poti and Gori have become major industrial centers.

Substantial shifts in the Tenth Five-Year Plan occurred in machine building and metalworking. The radio and electronics industry, instrument building and certain other subsectors developed rapidly.

A major reconstruction is being carried out at the Kutaisi Motor Vehicle Plant where for the first time in the history of Soviet automotive building they have begun producing a special agricultural model of a truck and trailer rig.

The chemical industry has developed intensely. The major enterprises of this sector are the chemical fiber plant in Rustavi, the lithopone plant in Kutaisi, the Tbilisi Chemical Pharmaceutical Plant and the Gruzbytkhim [Georgian Household Chemicals] and Gruzgornokhimprom [Georgian Mining-Chemical Industry] Production Associations.

In the building materials industry there has been an increase in the production of cement, reinforced concrete elements and products, wall panels and facing stone. In the Tenth Five-Year Plan, new enterprises of the construction industry were put into operation including: the housing construction combines in the towns of Sukhumi and Bzyb, a plant for reinforced concrete products in Rustavi while the Tbilisi Ceramic Combine was reconstructed and expanded.

The woodworking and pulp-paper industries are represented by the Ingur Pulp-Paper Combine, by furniture factories in the towns of Tbilisi, Kutaisi, Batumi, Tskhinvali, Samtrediya and Akhaldaba and by saw mills. In comparison with 1975, the product volume of the lumber, woodworking and pulp-paper sectors of the industry had increased by almost 1.5-fold.

In the republic economy, there is a high proportional amount of food industry sectors. Particularly developed are the tea, wine making, cognac, canning and tobacco sectors as well as the production of mineral waters and nonalcoholic beverages. Over the last 15 years, the Georgian wines and cognacs at international competitions and tastings have received almost 1,000 medals, including around 90 gold medals. During the years of the Tenth Five-Year Plan, more than 30 new tea, wine and canning plants have been built; the total product volume for the food industry has risen by more than 1.5-fold in comparison with 1975.

The proportional amount of light industry product in the total volume of industrial product is over 21 percent; over the Tenth Five-Year Plan, its production volume increased by 1.5-fold. The major enterprises of this sector located in the towns of Tbilisi, Kutaisi, Sukhumi, Batumi, Gori, Makharadze and Samtrediya produce products both for consumption within the republic as well as for exporting outside it.

Georgia produces (in percent of national production): 30 percent of the manganese ore, 30 percent of the mainline electric locomotives and 17.9 percent of the mineral water. The products of republic industry are exported to more than 80 nations of the world while the best models have been shown at international exhibits and fairs. Fundamental changes have also occurred in agriculture. Even during the first years of Soviet power the republic created conditions for rapidly converting agriculture to collectivization.

Over the years of Soviet power, great work has been done in land reclamation, the Samgorskaya, Tiriponskaya, Mukhranskaya and other irrigation systems have been built, the very large Upper Alazani Irrigation System is under construction and great attention is being paid to the draining of lands in the Kolkhid. In 1981, over 400,000 hectares of land were irrigated in the republic and around 150,000 hectares were drained.

In Georgia orchards and vineyards have been cultivated since ancient times. The favorable soil and climatic conditions in the Black Sea areas have contributed to the creation of an unique subtropical zone in the USSR. Georgian lands are covered by a green carpet of tea plantations, citrus orchards, while the areas under fruit and grape plantings have been significantly expanded.

Viticulture is one of the most ancient agricultural sectors in the republic. It is no accident that the labor of the vintner is praised in folk sayings and songs; in the republic's crest the grape vine is intertwined along with the wheat ears. Wines and cognacs from Georgia are universally renowned; there are over 500 local types of grape including such as Rkatsiteli, Saperavi and Tsolikauri. In 1981, the republic harvested more than 900,000 tons of grapes. Orchard raising has also been greatly developed; of the industrial crops, tobacco, sugar beets and sunflower are grown.

Tea production is of great economic significance and 95 percent of all purchases of varietal tealeaf in the USSR come from Georgia. The first tea plantations in Georgia appeared in 1845, however, in 1921, their area did not exceed 1,000 hectares. At present, tea occupies (in Western Georgia) almost 66,000 hectares. The harvesting of the tealeaf is one of the labor intensive agricultural jobs. The Georgian machine builders have developed the Sakartvelo tea harvester. The primary processing of the leaf is carried out at the local tea factories and then it is sent to the tea packaging factories in various cities of the USSR. In 1981, the Georgian tea growers produced record crops in harvesting over a half million tons of tea.

Georgia is the largest area in the USSR of subtropical farming where citrus fruits are cultivated including: mandarin oranges, oranges and grapefruits; also raised are persimmon, feijoa, medlar, fig, pomegranate and olives. The

republic is the only supplier in the USSR of bay leaf. Also of great value is the tung tree and various species of eucalyptus.

Also grown are volatile oil crops including the geranium, basil, jasmin and others which provide raw materials for the perfume industry. Melon growing has been developed in the suburban regions.

Livestock raising plays a major role in agriculture and cattle, sheep, pigs and poultry are raised. One of the old sectors of the Georgian economy is silk raising. Work is being done to develop new highly productive varieties of the silkworm. By the end of 1981, Georgian agriculture had over 25,000 tractors, 1,600 grain harvesting combines, 23,000 trucks and much other equipment for tea harvesting and potato planting. Aviation is also employed for various agricultural jobs.

The ruggedness of Georgia's terrain has determined the particular features in the development of the republic's transport. With the predominant growth of the length of roads and accelerated railroad electrification. The operating length of the railroad network which at present has been fully electrified has risen from 881 km (1921) up to 1,420 km (1981). In 1981, the republic railroads carried 23.4 million passengers and 39 million tons of freight. The total length of roads is 22,300 km, including 19,100 km of hard surfaced roads. Georgian maritime transport is of great importance. The basic flow of cargo (oil and oil products, ore, coal and so forth) passes through the major ports of Batumi and Poti. Air routes connect the republic capital of Tbilisi and a number of other cities with all the major cities and republic centers of the nation. In comparison with 1960, air transport cargo turnover has increased by 3.2-fold and passenger turnover has risen by 11.2-fold. Since 1966, the Tbilisi Subway has been in operation. Also widely used are cableways which are convenient under the conditions of the mountainous terrain.

The capital construction program has been carried out at an increasing pace. In 1921-1981, capital investments were over 30 billion rubles. A strong construction industry has been created. The total volume of capital investments in 1981, in comparison with 1940, increased by 14-fold. All of this made it possible for the republic in a comparatively short period of time to significantly increase its economic potential. In 1946-1981, fixed capital valued at almost 27 billion rubles was completed in the republic economy.

Housing construction has developed widely and in 1921-1981, more than 60 million m² of total housing area were completed, with 43 percent of this being completed in just the last three five-year plans. In 1951-1981, more than 770,000 apartments were built, and in 1956-1981, over 3.5 million persons received housing in new buildings or upgraded their housing conditions.

During the Eighth, Ninth and Tenth Five-Year Plans and in 1981, the state and cooperative enterprises and organizations (not including kolkhozes) built schools for 553,400 places, preschool institutions for 97,100 places and medical institutions with 21,300 beds. The architectural appearance of the republic's towns and villages has been changed. New enterprises have been built in industry and existing ones have been expanded and reconstructed.

The capital investment structure has been substantially changed. The proportional amount of agriculture has increased in the total volume.

The national income used for consumption and accumulation in 1981 rose by 2.5-fold in comparison with 1965. Three-quarters of the national income goes for consumption and considering the expenditures on housing and sociocultural construction and directly for the well being of the people, almost four-fifths. The wages of workers have been increasing systematically. The benefits and payments received by the public from the public consumption funds in 1981 reached more than 1.95 billion rubles and this was 2.9-fold more than in 1965.

The production of consumer goods is expanding and retail commodity turnover is growing. In comparison with 1965, the volume of retail trade in 1981 increased (in comparable prices) by 2.9-fold while the turnover of the public dining enterprises rose by 2.3-fold. Along with increased sales of foodstuffs to the public, the sale of cultural and service goods and consumer durables has also been growing. Per 1,000 inhabitants of the republic at present there are 211 TV sets, 230 radio receivers, 236 refrigerators and 152 washing machines.

The demand of the public for consumer services is being more fully satisfied, the level of services is rising, and the level of consumer services for the urban and rural population is coming closer together. Over the last 5 years, the annual increase in the sales volume of services in the countryside has averaged 17.6 percent with a total growth of 265 percent.

Georgia is rightly famous for its health resorts. At present here there are in operation more than 350 well-equipped seaside, alpine, balneological and climatic sanatoriums and vacation facilities as well as over 1,400 mineral springs. In terms of the number of physicians, the republic holds one of the first places in the world: in 1981, per 10,000 inhabitants there were 47 physicians. The number of hospital institutions has increased from 67 in 1923 up to 452 in 1981 while the number of hospital beds has risen, respectively, from 3,100 to 54,300. Physical culture and sports have undergone great development. The republic has 83 stadiums, 1,332 gymnasiums, 38 swimming pools and over 8,000 sports areas and fields.

Before the revolution, 76 percent of the Georgian population between the ages of 9 and 49 was illiterate. By the 1930's, the illiteracy of the population had been virtually eliminated. At present, Georgia has 3,836 general education schools of all types with a student body of 941,900 students. Georgia is one of the centers of ancient culture. The Georgian alphabet and writing, according to data in the chronicles, was created in the 5th Century A.D. Ancient Georgian books written on parchment, papyrus and paper are kept in many book repositories of the nation as well as abroad.

At present, books, newspapers and magazines are published in Georgian, Russian, Abkhazian, Ossetian, Armenian, Azerbaijani and a number of other languages. The 19 institutions of higher learning in the republic each year prepare around 15,000 specialists in all areas of modern science, technology and culture. The 153 vocational-technical schools train over 60,000 persons. More than 340,000 persons have mastered new professions and improved their skills at enterprises,

institutions, organizations and kolkhozes and have also engaged in other types of instruction. The VUZes, scientific and other institutions employ around 26,000 scientific workers including over 1,300 doctors of sciences and more than 9,000 candidates of sciences.

Each year the 11 publishing houses in the republic publish books of more than 2,000 titles with a total run of over 14 million copies. The holdings of the 4,195 mass libraries number over 37 million copies. The republic has more than 2,500 clubs and houses of culture, 106 museums, 31 professional theaters and more than 2,000 projector and screen installations.

Soviet Georgia has achieved significant successes in the years of the last five-year plans. The Tenth Five-Year Plan was qualitatively a new step ahead in the republic's economic and social development and in increasing its economic potential. There was a significant rise in the absolute increase, in comparison with the Tenth Five-Year Plan, as follows: for aggregate social product by 1.5-fold, for produced national income by 1.9-fold, for the production of industrial product by 1.4-fold and agricultural product (average annual production) by more than 2-fold.

During the 11th Five-Year Plan, the republic will achieve new heights in its development. The decisions of the 26th CPSU Congress for Georgia envisage the following: the production of industrial product is to rise by 31 percent, electric power by 1.2-fold, machine building products by 1.6-fold, chemical products by 1.5-fold, light and food industry products by 1.3-fold, including by 1.7-fold for canned fruits and vegetables. There is to be more rapid growth in the electrical engineering, electronics and radio industries as well as in instrument building.

A plant will be built for producing equipment for cableways. The construction of the Zhinvali Hydropower Project will be completed, construction will be continued on the Khudonskaya GES and construction will be started on the Manakhvanskaya GES.

New capacity is to be completed for processing tealeaf, grapes and for bottling mineral waters.

Great and difficult tasks confront the workers of agriculture and the processing sectors of the agroindustrial complex in the USSR Food Program for the period up to 1990 as adopted by the May (1982) Plenum of the CPSU Central Committee. There are plans to ensure grain production in the 11th Five-Year Plan of at least 740,000 tons and in the 12th up to 750,000-780,000 tons; for vegetable and melon crops the figures are, respectively, up to 700,000 and 880,000-900,000 tons, for grapes up to 1.1 and 1.4 million tons, for tealeaf (varietal) at least up to 488,000 and 635,000 tons, for meat (dressed) 160,000 tons and 215,000-220,000 tons, and for milk, respectively, 710,000 tons and 830,000-850,000 tons. Over the decade there are plans to drain and develop the lands of the Kolkhid Depression over an area of 70,000 hectares, to irrigate lands with an area of 120,000 hectares and to provide water for pastures on an area of 150,000 hectares. Over the decade the production of canned fruits and vegetables will be increased by 2.2-fold. Capacity will grow rapidly for the production of tea and the production of grapes, lemons, mandarin oranges and early potatoes will be developed.

Anti-erosion projects will be carried out on the Black Sea Coast, the construction of the Caucasus Pass Road will be completed and construction continued on the Marabda--Akhalkalaki Railroad. The resort zones and tourist facilities will be further developed.

"Things in Georgia are going swimmingly," said Comrade L. I. Brezhnev in May 1981 at ceremonies devoted to the 60th anniversary of the establishing of Soviet power in Georgia. In 1981, the first year of the 11th Five-Year Plan, the republic received the challenge Red Banner of the CPSU Central Committee, the USSR Council of Ministers, the AUCCTU and the Komsomol Central Committee.

Soviet Georgia, in the fraternal family of Soviet republics, is approaching a significant date, the 60th anniversary of the formation of the USSR. The Georgian SSR is fully determined to struggle to successfully carry out the decisions of the 26th CPSU Congress aimed at implementing the program of communist construction.

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Economic and Social Development in Moldavia

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[Article by Candidate of Economic Sciences K. Kozub, chief of the Moldavian Central Statistical Administration: "The Economic and Social Development of Moldavia"]

[Text] The Moldavian workers are greeting the 60th anniversary of the USSR with great achievements in building a new society. Over a brief historical period Soviet Moldavia, under the leadership of the Communist Party and with enormous aid from the Soviet peoples, primarily the great Russian people, has been turned from a backward borderland of Tsarist Russia into a flourishing region with highly developed industry, large mechanized agriculture, high culture and advanced science.

In 1961-1981 alone, the volume of fixed productive capital in the republic increased by 8-fold. The volume of fixed productive capital in construction has increased rapidly (by 17-fold), in agriculture (by 9.9-fold not including livestock) and in industry (by 10.2-fold). During the Tenth Five-Year Plan some 58 percent of the fixed productive capital in construction was replaced, with 53 percent in agriculture and 38 percent in industry.

The present-day economy of Moldavia includes great power production, machine building, highly developed sectors producing consumer goods, a newly created construction industry, large industrial and agroindustrial and interfarm complexes and associations ensuring rapid growth rates of the economic potential.

In 1961-1981, the gross social product of Moldavia increased by 4.1-fold and during the Tenth Five-Year Plan by 24 percent. This affirms the steady trend toward accelerated development of the republic's economy during the period of developed socialism.

Over the postwar period, more than 270 new large industrial enterprises were built and put into operation. The republic economy possesses advanced equipment, a developed power source and skilled personnel. In 1981, in comparison with the prewar level, the volume of industrial production rose by 52-fold and in comparison with 1922, by 901-fold.

At present, the republic industrial enterprises in just 7 days produce as much product as was produced in all of 1940. Here the industrial development rate has been significantly higher than for the nation as a whole.

Fundamental changes have come about in the structure of industrial production. Along with the traditional sectors of the food industry such as wine making, canning, flour milling and oil pressing as well as folk crafts, machine building, light and other industrial sectors have developed rapidly. The proportional amount of machine building and metalworking has risen from 3.7 percent in 1940 up to 17.3 percent in 1981 and for light industry from 3.3 percent up to 21.6 percent.

New machine building sectors have been created and are developing rapidly. These determine the level of technical progress at the present stage and include the electrical engineering industry, instrument building, machine tool building, chemical and oil machine building, materials handling machine building and tractor machine building. The volume of machine building and metalworking products in 1981, in comparison with 1960, had increased by 29-fold. The land which previously imported sickles and nails now produces unique power transformers, large electrical machines, precision metering instruments, tractors, tomato harvesting combines, household refrigerators and washing machines.

In 1981, the republic's machine builders produced almost 2,500 large electrical machines, 131,000 explosion-proof motors, 50,000 AC electric motors from 0.25 to 100 kilowatts, 96,000 centrifugal pumps, 9,400 tractors, 61 million rubles worth of instruments, automation and spare parts for these, a large amount of production equipment for foundry work and so forth.

In accord with the main area of the party's economic strategy, the production of consumer goods has been growing year by year at the machine building enterprises. During the Tenth Five-Year Plan alone, the output of these goods increased by 1.4-fold. The republic machine builders are carrying out great daily work to improve product quality. The following are produced with the State Quality Mark: 95 percent of the explosion-proof motors, 70 percent of the electric meters, 71 percent of the low voltage equipment. All the tractors have a superior quality category.

The building materials industry is developing intensely and its total volume in 1981 increased by 298-fold in comparison with 1940. Over the same period, the production volume of light industry products increased by 315-fold. In a single day in 1981, 2-fold more knitted underwear and outer knitwear were produced than in all of 1940. Over 60 percent of the types of consumer goods with the State Quality Mark in the republic are produced by the enterprises of the Moldavian Ministry of Light Industry.

During the years of Soviet power, the republic has created a modern furniture and woodworking industry; the volume of its product has been continuously growing.

Moldavia is a region with a developed food industry and its volume of production in 1981 had increased by 30-fold in comparison with 1940. Developing at the most rapid pace were the winemaking, sugar, butter, cheese and dairy industries. Among the Union republics, Moldavia holds third place in terms of the production of canned goods, grape wine and granulated sugar, fourth place in terms of the output of vegetable oil. At present, the republic produces 1.3 billion standard units of canned goods and this is more than for the nation as a whole in 1940. It produces 312,000 tons of granulated sugar, 103,000 tons of vegetable oil, 52 million decaliters of wine products and so forth.

In recent decades, such industrial sectors as the chemical, petrochemical and microbiological have begun to develop. The volume of industrial production from the chemical and petrochemical industry has increased by 25-fold in comparison with 1960.

The high growth rates for industrial production have been possible due to the creation of a strong energy base. Over a short period of time the two Kishinev and Beltsy TETs were built as well as the Dubossary GES and the Moldavian GRES, one of the largest in the south of the nation. The output of electric power in 1981 reached 16.7 billion kilowatt hours and this was 969-fold more than in 1940. The power plants supply electric power not only to their own republic, but also transmit a portion of its to Bulgaria and to the neighboring oblasts of the Ukraine.

Modern equipment and progressive production methods as well as the mechanization and automation of production are being widely introduced at the industrial enterprises while obsolete equipment is being replaced by new, more productive and more economic machines. In 1961-1981, the number of fully mechanized and automated enterprises, production lines, shops and sections increased by almost 15-fold. The equipment-to-labor ratio rose significantly. Moreover, in recent years the process of mechanizing and automating managerial labor has accelerated. During the years of the Tenth Five-Year Plan, 311 models of new types of machinery, equipment, devices and automation were created. Production was started up and serial output commenced for 459 new types of industrial products, more than one-half of which is being produced for the first time in the USSR.

As a result of the accelerated pace of mechanization and automation in the production processes and the reequipping of enterprises with new technology, in 1976-1980 the capital-to-labor ratio in industry rose by 30.7 percent. The proportional amount of new equipment in the total increase of labor productivity as a whole for the public increased from 36.9 percent in 1975 to 63.6 percent in 1980. Over the Tenth Five-Year Plan alone, the measures to develop science and technology provided a labor savings of more than 32,000 industrial workers, an additional profit of over 143 million rubles and an annual economic effect of 235 million rubles. Labor productivity in republic industry rose by 4.5-fold in comparison with 1940.

Various types of Moldavian-produced industrial products are exported to many nations of the world, including: centrifugal pumps, electric motors, battery-operated plant trucks, foundry equipment, transformers, electric furnaces, oscilloscopes and flaw detection equipment, tomato harvesting combines, washing machines, furniture, fur, garment and carpet goods, wines, canned goods, vegetable oil and so forth.

The setting up of new organizational forms of industrial production (production and scientific-production associations) has been a qualitatively new stage in the development of specialization and concentration. On 1 January 1982, 118 such associations had been organized and they were responsible for 43 percent of the volume of sold product.

Agriculture in prerevolutionary Moldavia was characterized by dwarf plots of land, by primitive means of production, by backward farming methods and poor yields.

Over the years of Soviet power, a powerful physical plant for agriculture was created in an unprecedentedly short time. The equipping of the kolkhozes and sovkhoses with advanced agricultural implements made it possible to mechanize many farm jobs and to improve farming practices. At the end of the 1950's and the beginning of the 1960's, the republic agriculture began a changeover from multisector to specialized production based on industrial methods, to the concentration of production based on interfarm cooperation, agroindustrial integration and a synthesis of science with production. This aided in a transition to highly intense specialized production.

At present, along with its 366 kolkhozes, 440 sovkhoses and sovkhos plants, the republic has in operation 245 interfarm enterprises, organizations and associations, 48 territorial agroindustrial associations and 12 scientific-production associations. These are part of the specialized farming systems.

Over the years of the Ninth and Tenth Five-Year Plans, there has been extensive development of agroindustrial integration. In 1981, the proportional amount of the agroindustrial associations in the nationalized sector of republic agriculture was: 28.3 percent in terms of the area of farming land and 30.7 percent in terms of the value of the fixed agricultural capital. These associations produced 28 percent of the total gross agricultural product.

At the end of 1981, the value of fixed capital in the nationalized sector of agriculture exceeded 6 billion rubles, including 5.7 billion rubles of productive capital. The capital-to-labor ratio for workers engaged in agricultural production on the kolkhozes, the interfarm agricultural enterprises, the associations and state farms in 1980 rose by 5.6-fold in comparison with 1965. The tractor fleet by the beginning of 1981 had increased by 37-fold in comparison with 1940, for trucks the figure was 59-fold and for grain harvesting combines 15-fold. The energy capacity in agriculture increased by more than 6-fold in comparison with 1960. Electric power consumption in agriculture in 1981 exceeded 2 billion kilowatt hours in comparison with 1 billion kilowatt hours in 1940. At present, the republic has in operation 77 large installations for producing milk, 29 for raising heifers, 29 for producing and fattening young cattle

and 39 for the raising and fattening of pigs. Produced on an industrial basis in 1981 were: 29 percent of the beef, 62 percent of the pork, 79 percent of the poultry meat, 23 percent of the milk and 91 percent of the eggs.

The strengthening of the physical plant of agriculture is one of the basic factors in raising the volume of agricultural production. The gross agricultural product of the republic in 1981 increased by 3.3-fold in comparison with 1940. The growth of the gross harvest of agricultural crops has been achieved by increasing their yield. Thus, the average annual yield of winter wheat during the Tenth Five-Year Plan was almost 5-fold higher than in 1940; for corn used for grain the figure was 2.6-fold and for vegetables and sunflower 1.8-fold.

In 1981, around 80 percent of the area planted under corn was raised using new industrial methods, 70 percent of the soybean plantings, 48 percent of the sunflower and 25 percent of the sugar beets. In agriculture, more mineral fertilizers have begun to be employed. In 1981, 7.4-fold more mineral fertilizer was applied per hectare of planted area than in 1965. Labor productivity in agriculture in 1981 almost doubled in comparison with 1960.

Such major sectors of crop raising as viticulture and orchard raising have also undergone further development. Over the last two five-year plans alone, over 64,000 hectares of new orchards and 200,000 hectares of vineyards have been planted. Moldavia has been turned into a major grape producing region. At present, vineyards, orchards and berry farms occupy 2.2-fold more area than in 1940. The grape yield has increased by 1.5-fold and for fruits and berries by 1.9-fold. In terms of the gross harvest and purchases of grapes as an average for the Tenth Five-Year Plan Moldavia holds first place in the nation. The gross grape crop has risen from 403,000 tons in 1940 up to 1,234,000 tons as an average per year in the Tenth Five-Year Plan; the figures, respectively, for fruits and berries are from 177,000 tons to 822,000 tons.

Extensive irrigation construction is being carried out. The area of irrigated land has increased by 7-fold in comparison with 1960 and has reached 230,400 hectares.

Livestock raising is also developing intensely. Gross livestock product in 1981, in comparison with 1940, rose by 5.3-fold. At the end of 1981, the number of head of cattle had increased over the designated period by 2.5-fold, for pigs by 5.4-fold and for poultry by 4.2-fold. Here all the purebred stock is basically at the kolkhozes, sovkhozes and interfarm enterprises. In 1981, meat production (dressed) increased by 4.4-fold in comparison with 1940, milk rose by 6.4-fold and eggs by 3.8-fold.

The productiveness of the livestock and poultry has increased significantly. The average annual milk yield from one cow on the kolkhozes, interfarm enterprises, associations, sovkhoz-plants, sovkhozes and other state farms in the Tenth Five-Year Plan was 3,031 kg in comparison with 832 kg in 1940, or a rise of 3.6-fold; the average annual number of eggs laid per layer increased by 2.5-fold in comparison with 1960.

As a result of specialization and concentration and the introduction of industrial methods, in 1981 in comparison with 1975, direct labor expenditures were

reduced for producing grain, sugar beets, sunflower, tobacco, vegetables grown on open ground, fruits as well as for the weight increase of cattle and hogs.

The fundamental changes in agriculture had a positive impact upon the prosperity of the rural workers. As a result of the measures undertaken to increase the wages of individual employee categories and due to the increased production of agricultural products and the better utilization of manpower, the wages of kolkhoz members in the nationalized sector of the kolkhozes, as well as for the workers of the interfarm enterprises and associations, the sovkhoz-plants and sovkhozes increased significantly. Thus, the average monthly wages of kolkhoz members (in the nationalized sector of the kolkhozes) in 1981 increased by 2-fold in comparison with 1965, by 1.6-fold for the workers of the interfarm enterprises and associations and by 1.9-fold for the workers of the sovkhoz-plants and sovkhozes.

One of the components in the general success of economic development at the present stage has been the efficient use of natural resources and the protection of the environment. Moldavia has carried out a series of measures aimed at preventing the negative effect of various sources of economic activity on nature. More attention has begun to be paid to anti-erosion farming measures on the kolkhozes, interfarm associations, enterprises and other state farms, to work in the area of conservation and rational utilization of forest and water resources, to reforestation and to protective forestation.

All types of transport and communications have developed widely as these are important components in the physical plant of the republic economy. More than 70 percent of the freight turnover comes from rail transport which is constantly being outfitted with new equipment. It has also been fully converted to diesel traction and in 1980 this made it possible to increase the dispatching of freight by 13-fold in comparison with 1940 and the arrival of freight by 34-fold. Passenger shipments rose significantly. Motor transport has developed rapidly. Great work has been done to build and reconstruct roads. The on-going development of the physical plant of motor transport and the fundamental improvement in the vehicles and road system contributed to the more rapid growth of freight shipments. In 1981, the freight turnover of motor transport in the republic economy increased by 295-fold in comparison with 1940 and by 187-fold for freight shipments.

At present, around 90 percent of all the republic population points are served by buses. The number of bus routes over the last 20 years has risen by more than 5-fold. At present every day motor transport carries 749,000 tons of national economic freight while the public buses carry 961,000 passengers.

In 1951-1981, the length of the navigable waterways increased by 2-fold. The river fleet was filled out with new modern vessels and extensive work was done to reconstruct and build piers, ports and terminals. Air passenger traffic increased by 3.4-fold in comparison with 1960 while the amount of aviation spraying increased by 3.2-fold in 1981 in comparison with 1960.

By the start of 1982, in comparison with 1940, there were 4.6-fold more communications enterprises and 6.4-fold more in rural localities. Intercom and dispatcher communications were significantly developed. Enormous work was done to develop and improve the quality of television, radio broadcasting and radio communications.

In 1981, national income, in comparison with 1960, rose by 3.7-fold. In just the years of the Tenth Five-Year Plan alone, 20.6 billion rubles went to satisfy the material and cultural needs of the workers; this was 4.6 billion rubles more than in the Ninth Five-Year Plan.

In 1981, the real per capita income rose by 2.2-fold in comparison with 1965. During the Tenth Five-Year Plan, a number of measures were carried out to further raise the standard of living of the population. The total amount of payments and benefits from the public consumption funds during the Tenth Five-Year Plan, in comparison with the Ninth, increased by more than 2 billion rubles, or by 44 percent. The measures envisaged by the 1981 plan from the program for social development and for increasing the prosperity of the people as adopted by the 26th CPSU Congress were carried out. The monetary income of the population rose. The average monthly earnings of employees increased and the wages of kolkhoz members rose. The total volume of retail trade in state and cooperative trade in 1981 exceeded the level in 1940 by almost 25-fold and the 1960 level by more than 5-fold. Special firm trade has been organized and is developing.

Public dining has developed widely. The number of public dining enterprises in 1981, in comparison with 1940, has increased by 5.2-fold. The network of dining rooms, cafes and buffets directly at the industrial enterprises, construction sites, schools, VUZes, technical schools and so forth has been growing. The volume of consumer services provided to the public increased, in 1981 in comparison with 1960, by 15-fold, including by 43-fold in the countryside. The volume of consumer service sales per inhabitant in 1981, in comparison with 1960, increased by 9-fold. The gap in the availability of consumer services for the urban and rural population has been narrowed. While in 1960 each urban inhabitant of the republic received 14-fold more consumer services than a rural inhabitant, in 1981 this gap had been reduced to 1.4-fold. New permanent and mobile receiving points have been opened. During the Tenth Five-Year Plan, new consumer service enterprises were put into operation. Particular attention has been given to creating comprehensive receiving points and service subdivisions directly at the livestock farms, field camps and in the brigades.

During the Tenth Five-Year Plan alone, the enterprises of the sector developed 77 new types and forms of consumer services for further improving the services to the republic population and for more fully satisfying their demand. Over 1,200 models of clothing, footwear, furniture, knitwear, carpet and other types of goods were developed and put into production.

There has been extensive construction of housing, schools and other institutions of learning, medical, cultural-educational and scientific institutions. The towns and worker settlements are receiving greater public amenities. In 1946-1981, the state and cooperative organizations as well as the employees themselves, with the providing of state credit, built housing with a total

area of 22.7 million m². Over these same years, the kolkhozes, the kolkhoz members and the rural intelligentsia built housing with a total area of 17 million m². In 1981, some 116,000 persons improved their housing conditions in the republic. This made it possible to bring the amount of housing area available per urban resident up to 12 m² of total area in comparison with 8.5 m² in 1961. Year by year the layout of the apartments has been improved, their amenities have increased and the number of floors in the completed housing has grown.

The great transforming strength of socialism and Lenin's nationality policy of the CPSU have been vividly reflected also in the area of culture, education and public health. Prior to Soviet power, the Moldavian people in their cultural development were among the most backward peoples of Tsarist Russia. Among the population in individual regions illiteracy approached 85 percent. Education was the privilege of the well-off classes. There were no institutions of higher learning or scientific research facilities.

Soviet power opened up for the Moldavian people broad access to education, science and culture. In recent decades the major problems of public education have been solved and a developed network of general educational schools, technical schools, VUZes, libraries, scientific and cultural-educational institutions has been set up. At present, all types of education involve more than 1.6 million persons or 1.7-fold more than in 1965; one out of every two inhabitants of the republic is studying. At the start of 1981, out of every 1,000 persons employed in the republic economy, 761 persons had a higher or secondary (complete and incomplete) education.

Universal secondary education is being realized. At present, 99 percent of the 8th grade graduates are continuing instruction in institutions of learning providing a secondary education. At the start of 1982, 50,000 persons were studying in the vocational-technical schools. In 1981, 77,400 persons received a secondary (general and specialized) education, while in 1965, the number was 16,800 persons.

Over the postwar years the republic has built 2,284 schools with 830,600 seats, preschool institutions with 233,400 places. There are 8 VUZes and 51 specialized secondary schools. The institutions of higher learning train almost 21-fold more students than in the 1940-1941 academic year; in the specialized secondary schools the figure is 14-fold more.

In the system of higher education the leading place is held by the Order of the Red Banner Kishinev State University imeni V. I. Lenin. The three state pedagogical institutes train school instructors and teachers for preschool institutions. The Kishinev Agricultural Institute imeni M. V. Frunze plays an important role in providing agricultural personnel. The State Arts Institute imeni G. Muzichescu trains artists, musicians and conductors.

The specialized secondary schools turn out a large number of specialists for all the national economic sectors. These include 15 sovkhos technical schools which graduate agronomists, zootechnicians, vegetables growers, land reclamation workers and other agricultural specialists who have a good practical knowledge for improving agricultural production.

As a total over 1946-1981, the higher institutions of learning in the republic graduated over 151,000 skilled specialists while the specialized secondary schools were completed by around 274,000 specialists. Instruction on the job has become widespread.

In the republic for every 10,000 persons there are 131 students in VUZes and 147 students in the specialized secondary schools. This is, respectively, 13- and 9-fold more than in the 1940-1941 academic year.

Over the period from 1961 through 1960, the number of specialists with a higher and specialized secondary education increased by 4.3-fold. Over the designated period the number of engineers and technicians rose by 8.2-fold and the figures for agronomists, zootechnicians and veterinary workers (with higher and specialized secondary educations) rose by more than 3.5-fold.

The Moldavian Academy of Sciences founded in 1961 plays the leading role in scientific development. Moldavian scientists have made advances in working out and solving a number of fundamental problems in the area of algebra and mathematical logic, semiconductor physics, physicochemical methods of analysis and bioorganic chemistry. The geneticists and breeders, the physiologists and biochemists have developed new varieties of grain, fruit and vegetable crops and have worked out progressive agricultural production methods under the conditions of concentration and specialization on the basis of interfarm cooperation and agroindustrial integration.

In industry and agriculture, scientific-production associations have been set up and these, along with scientific research, conduct extensive work in accelerating the introduction of scientific achievements into production. On 1 January 1982, the republic had at work 49-fold more scientific workers than in 1940.

The network of cultural and educational institutions has been widely developed. Presently, Moldavia has 4,375 libraries of all types and 1,866 club institutions. Some 198,000 persons are involved in the amateur artistic collectives organized at the clubs and the palaces and houses of culture.

Virtually all the population points are covered by movie services and many projector and screen units can be found on the farms, the kolkhozes and sovkhozes. Moldavia is one of the most reading republics with 2 million persons involved in the mass libraries alone. The museums have significant holdings and carry out great cultural, educational and scientific work. In 1981, the 56 museums were visited by 2.6 million persons.

The annual run of magazines and other periodicals in 1981, in comparison with 1940, increased by 1,154-fold while the single run of newspapers rose, respectively, by 34-fold.

There are 7 professional theaters, the State Philharmonic and numerous folk theaters and amateur artistic collectives. There is a whole galaxy of talented writers, artists, sculptors, composers, stage performers and cinematographers of whom the entire nation is proud.

Moldavia has created a modern system of medical services for the population. Due to the increased standard of living and the better public health, a number of previously widespread infectious diseases has been eliminated. Republic public health has a developed physical plant. The number of hospital beds available to the republic population has increased by 5-fold in comparison with 1940. The number of medical institutions providing out-patient and polyclinical aid to the population has grown while the number of physicians of all specialties has increased by 12-fold. In terms of the number of physicians for the population the republic is higher than such capitalist nations as the United States, England, France, Italy, Japan and has 31 physicians per 10,000 inhabitants in comparison with 4 in 1940. Particular attention has been given to protecting the health of mothers and children. In comparison with 1940, the network of women's consultation offices, children's polyclinics and out-patient clinics has risen by 6-fold.

The Moldavian economy, in developing as an organic part of the unified national economic complex, in the 11th Five-Year Plan will achieve a new rise. The output of industrial product over the five-year plan is to increase by 32 percent; the average annual volume of agricultural product will rise by 22 percent; national income should grow by 31.7 percent. The sectors which determine scientific and technical progress such as power and machine building will be developed at a more rapid rate.

The growth of production and economic potential is the basis for successfully carrying out the party's social program. In the current five-year plan, real per capita income will grow by 19 percent, and housing with a total area of 7.4 million m² will be built. New general education schools, children's pre-school institutions, cultural-educational institutions, hospitals and a number of other projects will also be built.

Also planned are the wide development and introduction of new progressive production methods, machinery and equipment, fully mechanized and automated lines and automated control systems.

In accord with the decisions of the 26th Party Congress and the November (1981) and May (1982) Plenums of the CPSU Central Committee, more rapid growth will occur in the sectors playing a primary role in supplying the public with food products. As a result of the growth of social production and its increased efficiency, national income in the second year of the five-year plan should increase by 11.3 percent.

In accord with the USSR Food Program for the period up to 1990, in the 11th Five-Year Plan the average annual gross grain harvest should be 3.6-3.8 million tons and in the 12th, 3.9-4.0 million tons; grape production, respectively, should be 1.5-1.6 million tons and 1.7-1.8 million tons; for fruits and berries 1.4-1.6 million tons and 2.2-2.5 million tons. Over this same period at least 240,000 hectares of irrigated land should be put into operation, including the organizing of systems employing drop irrigation for irrigating orchards and vineyards on an area of 35,000-40,000 hectares.

The tasks proposed by the CPSU for the 11th Five-Year Plan conform to the vital interests of the Soviet people. The Moldavian workers, having initiated a socialist competition, are preparing to worthily celebrate the 60th anniversary of the formation of the USSR.

There is no doubt that the tasks of communist construction as outlined by the 26th CPSU Congress will be successfully carried out.

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